REMARKS / ARGUMENTS

Objections - 37 CFR 1.121(c)(1–4)

In the Office Communication mailed July 5, 2005, the Examiner objected to applicant's submission under 37 CFR 1.129(a) filed on September 22, 2004 as not in keeping with 37 CFR 1.121(c)(1–4) for failing to provide amended claims with indications of amended subject matter.

The Examiner also objected to applicant's September 22 arguments as being unclear where the point of novelty lies. After conducting a brief review of applicant's arguments and without a full examination on the merits, the Examiner suggested prior art references that were quite helpful in clarifying the issues to be argued.

Applicant submitted separately a Supplemental Information Disclosure Statement citing prior art references found in a search guided by the Examiner's suggestions. To distinguish over this prior art, applicant found it necessary to completely rewrite the claims filed on September 22, 2004 which made it impractical to submit claims with underlining and strikethroughs. For this reason, applicant cancelled all prior claims and herewith submits new claims under 37 CFR 1.121(c)(3).

New method claim 307 is for use in a video game apparatus in which two game systems are linked through a data transmission link. A first game system contains a first processor and a graphics coprocessor that uses polygon graphics processing

to generate first non-sprite polygon vertex data that represents a shape of a 3-D player object in a 3-D game world and is rendered to produce a pixel representation of the 3-D object as viewed from a first variable 3-D viewpoint and camera angle for display on a first display device such as a TV.

The first game system transmits game data to a portable game system. In accordance with this game data, the portable game system uses polygon graphics to generate second non-sprite polygon vertex data that represents a shape of a second 3-D player object in a 3-D game world and is rendered in the portable game system to produce a pixel representation of a 3-D object as viewed from a second variable 3-D viewpoint and camera angle for display on the LCD in the portable game system. The word "vertex" is implicit in "rendered polygons" in the original specification.

Claim 307 distinguishes over the teachings of the Atari Lynx and NEC's Turbo Express because applicant's invention generates and renders polygon vertex data that does not need the sprite processing used in the Lynx, Turbo Express, Gamegear, Neo Geo Pocket Color, WonderSwan, GameGear and Gameboy.

The Atari Lynx is illustrated and described in US patent 4,969,647. The block diagram in Fig. 4 shows two processors, CPU 52 and video [graphics] control circuit 59 displaying on LCD 23. Although patent '647 does not mention the words polygon or render, two of the three inventors Needle and Mical were also granted US patent 5,596,693 "Method for Controlling a Spryte Rendering Processor" that explains how rectangular sprites can be distorted into quadrilaterals by a "spryte engine 214" processor in non-portable "home-game systems (e.g. Nintendo Entertainment System").

According to http://en.wikipedia.org/wiki/Atari_Lynx that provides "Atari Lynx - Technical Specifications", the Atari Lynx contained an 8-bit CPU processor and a 16-bit graphics processor. The graphics processor provided "sprites with collision detection, hardware sprite scaling, distortion and tilting effects, hardware decoding of compressed sprite data, and hardware clipping and multi-directional scrolling." This specs sheet makes no mention of polygons or rendering.

A very detailed technical Lynx-Documentation by M. Domin and B. Schick 1987 may be found at http://www.geocities.com/SiliconValley/Byte/4242/lynx/lynxdoc.html

In Chapter 6 "Sprite/Collision", section 1 (paragraphs 11–12), is the following:

> "The horizontal size of a sprite can be modified every time a scan line is processed. This allows for 'stretching' a sprite and in conjunction with 'tilt' can be useful in creating arbitrary polygons.
>
> The horizontal position of a sprite can be modified every time a scan line is processed. This allows for 'tilting' a sprite and in conjunction with 'stretch' can be useful in creating arbitrary polygons."

According to http://www.absoluteastronomy.com/encyclopedia/a/at/atari_lynx.htm in an article "Atari Lynx", "The Lynx was also the first gaming console with hardware support for zooming/distortion of sprites, allowing fast pseudo-3D games with unrivaled quality at the time and a capacity for drawing filled polygons with limited CPU intervention."

In a review of Lynx game Stun Runner, reviewer Gregory D. George said "True polygon graphics would have slowed the Lynx to a crawl." This is at web address: http://www.ataritimes.com/lynx/reviews/stunrunner.html

As suggested by the Examiner, NEC's 1990 portable game system, the Turbo Express, is described at http://www.atari7800.com/turbo/systems.htm + link pages:

http://www.atari7800.com/turbo/exp.htm	Introduction
http://www.atari7800.com/turbo/history_exp.htm	System History
http://www.atari7800.com/turbo/exp_overview.htm	System Specifications

None of these Turbo Express pages mention the words polygon or render. The specs sheet says the Turbo Express "Can Manipulate 64 Sprites at Once".

Similar comments can be made about the other portable game systems from that 1989–2001 era:

1989	Lynx	max 254 bytes per sprite
1989	Gameboy	max 40 sprites
1990	Turbo Express	max 64 sprites
1990	GameGear	max 64 sprites
1995	Nomad	max 80 sprites
1998	NeoGeo Pocket Color	max 64 sprites
1999	WonderSwan	max 128 sprites
2001	GameBoy Advance	max 128 sprites

All of the portable game systems were sprite based, with no additional hardware for polygon graphics. From this it is clear that designers of portable game systems assumed that a hardware sprite engine was sufficient for pseudo 3-D in a handheld. If gamers wanted true 3-D polygon graphics, they would buy a console system.

Applicant's claim 307 distinguishes over this prior art sprite technology by limiting to "non-sprite polygon vertex data" in the portable game system.

In the recent Office Communication, the Examiner suggested that applicant consider US patent 5,415,549 (Logg '549) for its teachings in the present response. Logg discloses a "Method for Coloring a Polygon on a Video Display". In the Background section at column 3, line 39, Logg refers to the Lynx handheld as an example in a paragraph discussing player control of viewing angles and viewpoint by a virtual "camera". In column 3, lines 39-45 Logg '549 writes: "Lynx, a hand held video game player manufactured by Atari, Inc. of Sunnyvale, Calif, includes a cartridge for "California Games" a skate-boarding adventure game. In "California Games" the player can change camera angle and camera pitch which, for example, zooms in on a skateboarder at the top of a pipe."

Logg does not show, describe, or remotely suggest that his invention be used in the Lynx or any other portable game system. Except for that one sentence in line 39, the words "portable", "handheld", "hand held" or "sprite" do not appear in Logg. Logg '549 provides no enabling disclosure for polygon graphics in a portable game system. In Fig. 3, Logg shows a video display 162 in an arcade game, not an LCD.

As discussed above, the Lynx is a sprite-based portable game system that provides 3-dimensionality, variable viewpoints, and variable camera angles by selecting and distorting rectangular sprites, depending on the camera angle.

Applicant's claim 307, element (e) includes "rendering ... from a second variable 3-dimensional point of view and camera angle for display on said discrete display device in said portable game system". This is a standard feature in polygon graphics which becomes novel only in the novel context of claim 307.

Claim Rejections - 35 USC §103

In the Office Action dated August 11, 2004, the Examiner rejected claims 213 – 275 under 35 USC 103, as being unpatentable over Fujimoto et al (US 6,238,291) in view of Miyamoto et al (US 6,139,433) and in further view of Sawano et al (US 6,544,126) which are referred to as '291, '433, and '126 respectively. Applicant has canceled claims 213 –275 and herewith submits new claims 307 – 332 which are believed to be novel and non-obvious over all prior art.

Fujimoto '291 teaches a Nintendo 64 (game system 100 in Fig. 1) containing a first processor (11 in Fig. 5), a first graphical processor (16), a TV display (600), and transfers data to a Gameboy (400) containing a second processor (431 in Fig. 6), an LCD processor (433), and a discrete LCD display (401). Fujimoto '291 is silent regarding 3-D game worlds, polygon rendering, and camera angles.

The related application of Miyamoto '433 teaches the ability of the Nintendo 64 (Fig. 1 in '433) to generate 3-D graphics that include multiple points of view and camera angles, and 3-D objects displayed on a display device (Figures 4, 23, 26, 33 and Abstract). According to the Examiner, it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate the 3-D capabilities of the Nintendo 64 game system as demonstrated in Miyamoto '433, into the system of Fujimoto '291, in order to offer the user greater visual detail and to maintain users interest in the gaming device.

Although incorporating the 3-D capabilities of the Nintendo 64 game system (as shown in Miyamoto '433) into the Nintendo 64 system of Fujimoto '291 is implicit in the design, there is no suggestion in either '433 or '291 that the polygon graphics capabilities of the Nintendo 64 system 100 could be incorporated into the Gameboy (portable game machine 400 in Fujimoto). Linking Nintendo 64 system 100 to Gameboy 400 as shown in Fujimoto, cannot confer graphics capabilities to Gameboy 400 because communication cable 200 only transfers data between 3-D system 100 and portable system 400 and does not transfer 3-D polygon graphics processing capability. Neither Miyamoto '433 nor Fujimoto '291 show, describe, or remotely suggest 3-D polygon graphics processing capability or polygon vertex data in a portable game system such as a Gameboy.

3-D polygon graphics capability in Miyamoto '433 is provided by coprocessor 200 which is described in greater detail in US patent 6,239,810 (Van Hook et al). Van Hook '810 does not show, describe, or remotely suggest that 3-D graphics coprocessor 200 could be used in a portable game system such as a Gameboy. In Van Hook '810 there is no mention of "Gameboy" or "portable game" or "LCD" or "battery" that would suggest portability, an essential element of applicant's claim 307. To the contrary, Van Hook teaches away from portability in col. 5 lines 24–28:

> "The user also needs to connect main unit 52 to a power source. This power source may comprise a conventional AC adapter (not shown) that plugs into a standard home electrical wall socket and converts the house current into a lower DC voltage signal suitable for powering main unit 52."

The Gameboy 400 shown in Fujimoto '291 is a portable game system that contains an "LCD processor 433" that is described in column 7 lines 45–50 and 61–67. This LCD processor 433 is not a 3-D graphics processor as suggested in the August 11, 2004 Office Action, but rather processes sprites as described in US patent 6,315,669 (Okada et al) in column 1, lines 37–39 and 48–51 as follows:

> "The graphics of the GAMEBOY are created from blocks of pixels known as characters... Objects are groups of character data that are used to represent the main game character and other moving objects that overlay the background in a game. Objects are sometimes referred to as "sprites".

3-D polygon graphics processing is a technology that originated in the 1970's and encompasses several subclasses under USPTO class 345. Sprite processing (USPTO class/subclass 345/683) is technology that is distinct from the 3-D polygon graphics process described in Miyamoto '433, and Van Hook '810. There is no mention of "sprite" or "sprites" in either Miyamoto '433 or Van Hook '810 which describe generation of rendered polygon vertex data, not sprites.

The Gameboy described in Fujimoto '291 was designed to generate pictures using sprites for display on small portable LCD screens and was not designed to produce 3-D polygon graphics in the sense used in Miyamoto '433 and Van Hook '810 in connection with the Nintendo 64. Generating 3-D polygon graphics in a Gameboy was therefore far from obvious prior to applicant's invention.

The words "3D", "3-D", "dimension", "polygon", "perspective", "point of view", "POV", "viewpoint", "camera angle" and other indicia of three-dimensionality are not used in

Fujimoto '291 or Okada '669. Wherever these terms are used in Miyamoto '433 or Van Hook '810, they are used only in connection with display on a TV screen, not on a portable game system LCD device. Examples of 3-D polygon graphics on portable LCD devices are not shown, described, or remotely suggested in Fujimoto '291, Miyamoto '433, Okada '669, or Van Hook '810.

Even if, for the sake of argument, graphics co-processor (200) used in the Nintendo 64 (and described in Miyamoto '433 and Van Hook '810) were designed into a Gameboy for generating 3-D game worlds and rendered polygon objects from variable viewpoints and angles, a design not remotely suggested by any of the cited references, this design would be very impractical, because the Nintendo 64 co-processor consumes enough energy to require AC electric power, as mentioned above with reference to Van Hook '810 in column 5 lines 24–28. The prior art therefore teaches away from the suggested combination by placing rendered polygon objects generated from variable 3-D viewpoints and variable 3-D camera angles solely in non-portable game systems.

"Portable game system" is a term of art (and an essential element in applicant's claim 307) that includes being powered by a battery for portability. In a portable game system, large energy consumption by a graphics co-processor would inevitably result in very short battery life which would make the portable game product unmarketable. The Nintendo 64 system described in Miyamoto '433 and Van Hook '810 is not a portable game system and therefore does not have the low power consumption circuitry required for a battery powered portable game system that operates independently of 110/220 vac electric power.

It would be impractical to transplant a high energy consuming polygon graphics co-processor from a video game system that is powered from an electric wall socket, and design the high energy consuming co-processor into a portable game system powered by batteries that require low power consumption. Combining the 3-D polygon graphics processor of Miyamoto '433 or Van Hook '810 with the portable game machine 400 described in Fujimoto '291 would therefore be impractical and unmarketable.

The practical solution disclosed in applicant's present application was not shown, described, or remotely suggested in Fujimoto '291, Miyamoto '433, or Van Hook '810. Combining those references would not result in the invention defined by applicant's claim 307.

Applicant therefore submits that claim 307 and claims dependent thereon are not obvious in view of the combined teachings of Fujimoto '291 and Miyamoto '433 and hence are allowable over those references.

In the Office Action dated August 11, 2004, the Examiner rejected claims 213–275 under 35 USC 103, as being unpatentable over the combined teachings of Fujimoto '291 and Miyamoto '433 in view of Sawano et al (US 6,544,126).

Sawano '126 teaches a video game machine (14) such as a Gamecube that is digitally linked to a portable game machine (12) such as a Gameboy or Gameboy Advance (12A–12B). 3-D graphics and a 3-D graphics engine are described for the Gamecube in columns 6 and 8. Sawano '126 is silent regarding polygon rendering, points of view, and camera angles.

According to the Examiner, it would have been obvious to utilize the 3-D capabilities of the Gameboy in the light of the combined teachings of Fujimoto '291, Miyamoto '433 and Sawano '126, so that character actions will not be revealed to other players.

As indicated by the Examiner, Sawano '126 in column 6, lines 32–49 suggests that

"some 3D-capabilities are also possible depending on the software being used."

Sawano '126 in this one line 48 suggests 3-D graphics as a desirable goal in a portable, but methods or apparatus for achieving that goal are not shown, described, or suggested in Sawano '126. Moreover, the words "viewpoint", "angle", "point of view", "POV", "perspective", "viewed", and "polygon" are not used in either Sawano '126 or in Fujimoto '291. Wherever 3-D is mentioned, other than in column 6, line 48, the 3-D graphics are for display on a TV screen (50), not on LCD screen (24). Hence combining the teachings of Sawano '126 and Fujimoto '291 would not provide any guidance in designing a portable game system that generates characters from polygon vertex data and from variable 3-D camera angles in accordance with data received from a video game system, as required by applicant's claim 307.

In Sawano '126, the expression "3D" is mentioned in four phrases:

column 5, line 52 "GAMECUBE 3D video game system"

column 6, line 57–58 "the games played by portable unit 22 [GameBoy] are 2D games but some 3D-capabilities are also possible"

column 6, line 62–65 "video game machine 14 [GameCube] ... may be a 3D video game play system with advanced 3D graphics"

column 8, line 5–6 "video game machine 14 [GameCube] has a CPU 78 including a 3D graphics engine"

3-D graphics engines for GameBoys are not mentioned in Sawano '126, which would be a strange omission if it were obvious to substitute a polygon graphics co-processor for the Gameboy co-processor designed for sprites, bitmaps, and tiles. Moreover, none of the drawings in Sawano '126 illustrate 3-D graphics on LCD screen 24. Stick figures are illustrated in Figures 13A–13D, but these are not player-controlled objects, are not from polygons, are not 3-dimensional, and are not displayed from variable points of view and camera angles, as required by applicant's claim 307.

In Sawano '126, portable game machine 12 (Fig. 2) is identified in column 5, lines 48–50 as a "GAME BOY or GAME BOY ADVANCE" and linked Gameboy Advance units 12A–2B are illustrated in Fig. 10. The internal structure of CPU 66 (Fig. 2) for a Gameboy Advance is not specified in Sawano '126, but is described in detail in US 2004/0053691 (Kawase). In Kawase '691, a Gameboy Advance is illustrated in Fig. 1 and is identified as such in paragraph [0049] in '691. The image co-processor in the Gameboy Advance (1) in Kawase '691 is a sprite processor and is not shown or described as generating 3-D images from polygon data or from variable camera angles in Sawano '126, or in Kawase '691, or in any of the cited references.

According to block diagram Fig. 2 in Kawase '691, the Gameboy Advance sprite co-processor consists of Background (BG) process unit 210, object (OBJ) process unit 212, and image synthesis process unit 213 which drives LCD 11. Paragraph [0056] in '691 refers to "the hand-held game machine 1 [which] performs a so-called sprite process by using the BG process unit 210 and the OBJ process unit 212 to generate a game image." Figures 6, 8, and 18 clearly depict sprites. The objects illustrated in Figures 5A, 5B, 11A, and 11B appear flat because they are generated by "a so-called sprite process" in the Gameboy Advance.

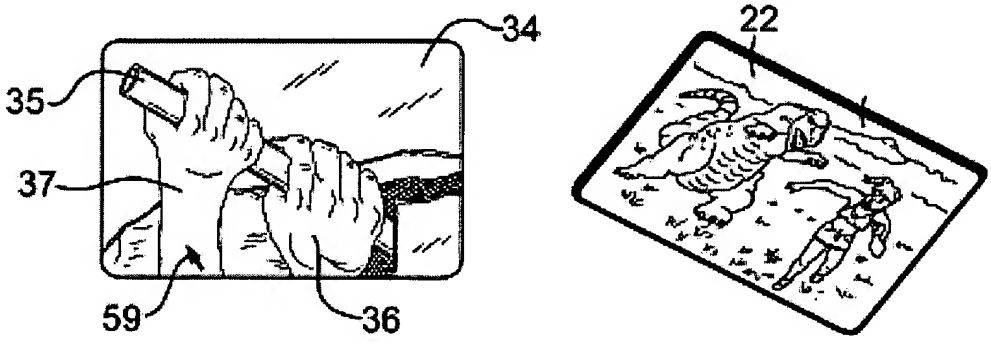
The word "polygon" does not appear in Kawase '691 or in several other Nintendo US patent applications that describe the Gameboy Advance, such as 2004/0110563, 2004/0106456, 2004/0087369, and 2004/0005928.

Moreover, the word "polygon" is not mentioned even once in two Internet web sites that provide very detailed technical descriptions of the Gameboy Advance. These web sites describe Gameboy Advance hardware interupts, BIOS calls, graphics modes 0 through 5, bit-by-bit descriptions of the Program Status Register and color palette RAM, and a section on Sprites: "The GBA supports 128 simultaneous sprites. These can be up to 64x64 pixels in size. The OAM, which starts at 0x07000000, has one entry for each of the 128 sprites." It then describes sprite attributes bit-by-bit for more than 3 pages, but not a word about polygons anywhere in the two documents. These Gameboy Advance documents may be found at:

www.jharbour.com/gameboy/GBA_02.pdf and

www.cs.rit.edu/%7Etjh8300/CowBite/CowBiteSpec.htm

Unlike the sprite objects illustrated in Figures 9(A) and 9(B) in Fujimoto '291 which are rectangular tiles for display on the portable LCD (401), applicant's "characters" resemble people or animals or monsters or their body parts such as hand 37 displayed on portable LCD screen 34 or 22, as illustrated in applicant's Figures 2–4:



These 3-D characters may be rendered from polygon data in a portable according to applicant's paragraph [0067]: "Fig. 11 shows hand 37 shaped as a fist... The polygons which form the image of hand 37 on LCD 22" and in paragraph [0075] "rendering texture-mapped polygons... and related graphics processing". Polygons are not mentioned in Sawano '126 or in Kawase '691 which specifies in paragraph [0056]: "the hand-held game machine 1 performs a so-called sprite process".

Applicant's claim 307 is limited to objects in 3-D game worlds that are generated from polygon vertex data, without a need for sprite processing, and rendered from 3-D variable camera angles for display on a portable LCD. This polygon graphics improvement to portable game systems was not obvious on applicant's priority date.

The words "polygon" or "angle" are not used in Sawano '126 and generating objects from 3-D polygon data or from variable 3-D camera angles is not shown, described or remotely suggested in Sawano '126. The combination of Sawano '126, Fujimoto '291, and Miyamoto '433 suggested by the Examiner would therefore fail to teach the suggested "3-D capabilities of the Nintendo Gameboy" regarding variable 3-D polygon graphics and variable 3-D camera angles because of lack of enabling disclosure in Sawano '126.

As stated in Ex parte Levengood, 28 U.S.P.Q.2d 1300 (P.T.O.B.A.&I. 1993), the Patent and Trademark Office "can satisfy the burden of establishing a *prima facie* case of obviousness only by showing some objective teaching in either the prior art, or knowledge generally available to one of ordinary skill in the art, that would lead that individual to combine the relevant teachings of the references."

There are no relevant teachings regarding Gameboy 3-D graphics in Sawano '126, either alone or in combination with the other references. Instead, Sawano '126 merely expresses a hope that "some 3D-capabilities are also possible" A hope for a cure for cancer in a document lacking disclosure of any method of cure does not make obvious a later invention that discribes such a method. Likewise, the hope that 3D-capabilities are possible in a Gameboy in a linked system without any disclosure of a practical method of providing those capabilities, does not rise to the "relevant teachings" required in Levengood.

The combined teachings of Fujimoto '291, Miyamoto '433, Sawano '126, Logg '549, and Mical '647 provide no more than Sawano's hope for 3-D in the Gameboy and do not provide "relevant teachings" for polygon graphics in the Gameboy.

Therefore, applicant submits that generation of player characters in a Gameboy from 3-D polygon vertex data and rendering from variable 3-D camera angles was not obvious in the suggested combination of Sawano '126, Fujimoto '291, Miyamoto '433, and Mical '647 in which sprites, not polygon graphics, were used for 3-D player objects in the Gameboy, Lynx, and other prior-art handhelds.

If generating player characters using polygon graphics from variable 3-D camera angles for display on a portable LCD game system were obvious to '291, '433, '126, or '647 inventors, why did they not provide even one example in the drawings? This would be a strange omission if it were obvious to use 3-D polygon graphics on a portable LCD screen in the manner described by Miyamoto '433 for display on a TV screen.

In Miyamoto '433 and several other patents, Miyamoto illustrated characters such as Mario (Fig. 27E) generated by the Nintendo 64 from 3-D polygon data and from variable 3-D camera angles for display on a TV screen. But in US patent application 2002/0165028 that has a priority date of May 2, 2001, only 8 days prior to applicant's priority date, when Miyamoto, the game expert who invented Mario, chose examples of "characters" for display on an LCD device on a Gameboy Advance, he chose simple geometric objects instead of his Mario as illustrative characters. These characters are illustrated in Fig. 9(c) in Miyamoto '028:

(C) CHARACTER DATA FOR PORTABLE GAME MACHINE

Unlike Mario, geometric objects have only one body part and have no face, arms, legs, and other body parts that are viewed from various angles. In Miyamoto '028, geometric objects are generated as sprites. If it were obvious to generate people and other player characters from polygon vertex data and variable 3-D camera angles for display on portable game systems, why did Miyamoto choose geometric sprite objects instead of his Mario character? Clearly, it was not obvious to Miyamoto or his co-inventors to generate player characters from polygon vertex data and render for display on portable game systems designed for sprites when linked to a console game system that does generate characters from polygon vertex data for display on TV screens.

Therefore, applicant submits that claim 307 defines an invention that was not obvious to game experts at the time of applicant's priority date.

The cited references illustrate how game experts overlooked the present invention because they regarded a data linked portable game system as an LCD-equipped controller of the linked console game system. In US patent 6,132,315, column 11, lines 60–62, Miyamoto said: "the game play ... may be implemented by using the first-machine" [GameBoy] "in place of the controller". As long as they regarded a linked Gameboy as a smart controller, they overlooked the possibility of generating 3-D characters from polygon vertex data in portable game systems and rendering them from variable 3-D viewpoints and variable 3-D camera angles for display on portable LCD screens.

A more recent example of this mindset may be found in Aonuma (2003/0216177) which shows 3-D characters in Figures 5 and 6 for display on a TV screen, but belittles the LCD screen as "a 2-D map screen." Aonuma refers to the LCD screen as "the 2-D map screen" 38 times, as if portable LCD screens were necessarily limited to 2-D graphics such as maps. Aonuma mentions polygons and "virtual camera" in paragraphs [0004], [0064], [0069], [0070], and [0081] but only in connection with display on a TV screen. Aonuma does not show, discuss, or remotely suggest 3-D polygon graphics, 3-D camera angles, or 3-D objects on LCD 41. Aonuma's priority application was filed on May 17, 2002, more than one year after applicant's priority date. Applicant's invention was still not obvious one year after applicant filed his priority application.

Because portable game systems were stereotyped as LCD-equipped controllers and map screens in linked systems, the possibility of portable game systems providing auxiliary displays of 3-D objects rendered from 3-D polygon vertex data and from variable 3-D angles was overlooked. The long-standing assumption in the

prior art that portable game systems would not generate characters from polygon vertex data and from variable angles when linked to video game console systems that do generate characters from polygon vertex data and from variable angles, is evidence that applicant's invention was not obvious on his priority date.

None of the cited references show, describe, or suggest that a portable game system should render player objects from polygon vertex data, without a need for sprite technology, and rendered from variable 3-D viewpoints and angles for display on an LCD. In stark contrast, applicant's specification provides numerous illustrations of 3-D characters and other objects generated from 3-D polygon data for display on the LCD. For example, Figures 1, 2, 7, 11, 15, 22, 27, 28, 39, 42, and 43.

Generating 3-D objects using polygon graphics from variable 3-D viewpoints and 3-D angles in linked portable game systems was not suggested in the cited prior art because applicant's invention was not obvious to video game experts.

Applicant's invention is classified in a crowded art and therefore the novel, non-obvious improvements defined by the present pending claims should be regarded as significant.

Arguments directed above to claim 307 may also be directed to independent claims 319, 323, 329, and claims dependent thereon.

Applicant's invention alone achives the realism and 3-D views of animated objects by using polygon graphics in portable game systems. For the above reasons, applicant submits that the present pending claims define an invention that is novel, non-obvious, and a significant advance over the prior art.

When interpreting the claim expression "non-sprite polygon vertex data", it should be emphasized that "non-sprite" limits only "polygon vertex data" and does not limit possible use of sprite technology elsewhere in the portable game system. The claims cannot be circumvented by adding a few sprites.

Summary

1. None of the cited references suggest features uniquely claimed by applicant, namely, using polygon graphics to generate 3-D objects from non-sprite polygon vertex data for display on an LCD in a portable game system.

2. Combining the teachings of the cited references would not result in the game system defined by applicant's claims.

3. Applicant's invention uses portable game systems in a new way that was not described in the prior-art.

4. Applicant's invention was not obvious to game experts at the time applicant's priority application was filed.

5. 3-D video games are a crowded art and therefore applicant's unanticipated step forward is significant.

Applicant submits that the present pending claims are allowable and a favorable decision is respectfully requested.

Respectfully submitted,

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